



저작자표시-비영리-변경금지 2.0 대한민국

이용자는 아래의 조건을 따르는 경우에 한하여 자유롭게

- 이 저작물을 복제, 배포, 전송, 전시, 공연 및 방송할 수 있습니다.

다음과 같은 조건을 따라야 합니다:



저작자표시. 귀하는 원저작자를 표시하여야 합니다.



비영리. 귀하는 이 저작물을 영리 목적으로 이용할 수 없습니다.



변경금지. 귀하는 이 저작물을 개작, 변형 또는 가공할 수 없습니다.

- 귀하는, 이 저작물의 재이용이나 배포의 경우, 이 저작물에 적용된 이용허락조건을 명확하게 나타내어야 합니다.
- 저작권자로부터 별도의 허가를 받으면 이러한 조건들은 적용되지 않습니다.

저작권법에 따른 이용자의 권리는 위의 내용에 의하여 영향을 받지 않습니다.

이것은 [이용허락규약\(Legal Code\)](#)을 이해하기 쉽게 요약한 것입니다.

[Disclaimer](#)

Master's Thesis of Business Administration

Perceived Healthiness of Food
Items Labeled “Additive- Free”:
The Role of Food Type and Gender

무첨가물 표시 식품에 대한 소비자의 평가에
관한 연구: 음식 유형과 성별 효과를 중심으로

August 2019

Graduate School of Business Administration
Seoul National University
Business Administration Major

Pradhan Era

Perceived Healthiness of Food Items Labeled “Additive– Free”: The Role of Food Type and Gender

Examiner Chu Wujin

Submitting a master’s thesis of Business
Administration

August 2019

Graduate School of Business Administration
Seoul National University
Business Administration Major

Pradhan Era

Confirming the master’s thesis written by
Pradhan Era
August 2019

| | | |
|------------|---------------------|--------|
| Chair | <u>Song Inseong</u> | (Seal) |
| Vice Chair | <u>Park Kiwan</u> | (Seal) |
| Examiner | <u>Chu Wujin</u> | (Seal) |

Abstract

With respect to people's growing concern towards their health, there is a wide use of attractive label such as "additive-free" claims by food companies which indicate healthiness and safety of their food products. While many past researches focused on consumers anxiety towards food additives, very few researches have been done on additive-free claim despite its wide usages in food market. The current study analyzed the perceived healthiness of food products having additive-free claim with respect to the role of food type and gender. In this regard, the study consisted two groups, Group 1 where participants were presented with healthy and unhealthy food without additive free claim and, Group 2 where participants were presented with healthy and unhealthy food with additive free claim. The study was conducted through online where a total of 105 participants participated in the survey. The results of current study showed that perceived healthiness of food products is greater with additive-free claim than without additive-free claim, additive-free claim is greater in unhealthy foods than in healthy foods and is greater in females than in males.

Keyword: additive-free claim, perceived healthiness, gender, food type

Student Number: 2017-20498

Table of Contents

| | |
|--|----|
| 1. Introduction..... | 1 |
| 2. Literature Review and Hypotheses..... | 4 |
| 2.1 Additive-Free Claim..... | 4 |
| 2.2 Food Type..... | 8 |
| 2.3 Gender..... | 12 |
| 3. Research Methodology..... | 17 |
| 3.1 Procedure..... | 17 |
| 3.2 Participants..... | 21 |
| 4. Research Results..... | 23 |
| 5. Conclusion..... | 34 |
| 6. Limitations and Future Research..... | 38 |
| 7. Bibliography | 40 |
| 8. Appendix..... | 47 |
| 9. Abstract in Korean | 63 |

Figures

| | |
|--|----|
| Fig 1. Conceptual Model..... | 16 |
| Fig 2. Difference in perceived healthiness between experimental and control group | 25 |
| Fig 3: Two-way interaction effect between additive free claim and | |

| | |
|--|----|
| food type..... | 28 |
| Fig 4: Two- way interaction effect between additive free claim and gender..... | 31 |

Tables

| | |
|---|----|
| Table 1. Demographic Table..... | 22 |
| Table 2: One-way ANOVA analysis of additive-free claim on perceived healthiness..... | 24 |
| Table 3: Mean scores of perceived healthiness in experimental and control group..... | 24 |
| Table 4: Two-way ANOVA between additive- free claim and food type on perceived healthiness..... | 27 |
| Table 5: Mean score of perceived healthiness by additive free claim by food type..... | 27 |
| Table 6: Two Way ANOVA between additive free and gender on perceived healthiness..... | 30 |
| Table 7: Mean scores of perceived healthiness by additive free claim and by gender..... | 30 |
| Table 8: Three Way ANOVA between additive free, food type, and gender on perceived healthiness..... | 33 |

1. Introduction

As number of aging population suffering from cancer, diabetes, hypertension (WHO 2011) have been increasing and young children are increasingly being affected by food allergies (Jackson et al. 2013, Prescott et al. 2013), consumer anxieties about food additives have been increasing. Past researches show that some consumers don't trust even approved additive as they fear such approved additives may distrust them and affect their health in future (Lee 2012). With growing concern about health, marketers have started to label "additive free" on food products (Song and Im 2018).

"Additive- free" is a marketing claim which is used to imply that specific additives have been removed from products implying healthiness and safety of product (Song and Im 2018). Marketers use additive free claim in frozen, refrigerated, processes, environment friendly food products, health supplements and beverages. Although clean labeling definition is not clearly defined, but additive free is one of the types of clean labeling which is considered as a label which claims that a food is minimally processed and doesn't have certain additives or allergen (Gurnani 2014, Hutt and Sloan 2015). For example, no artificial colors or flavors in chocolate bars, no nitrates and no MSG in beef jerky (Song and Im 2018). Restaurant

franchises such as Taco Bell, Pizza hut, and Panera bread have also used “additive-free” in the United States (Tristiano 2015).

Many researches have been done on people’s attitude and perceived healthiness of food items labeled as organic, natural, low fat etc. very few researches have been done on additive free claims compared to their extensive uses in market (Song and Im 2018). Similarly, while earlier researches have been done on examining anxiety and attitudes towards food additives (Koyratty et al. 2014, Shim et al 2011), very few researches have been done on additive free claims compared to their extensive uses in market (Song and Im 2018). With respect to wide use of additive free claim, it is important to conduct studies on additive free claim.

The past research on additive free claim shows that additive free claims on products increase positivity effect and halo effect of such food products, where intensity of positivity effect and halo effect are greater in unhealthy food products than healthy food products, and that the intensity difference is greater in consumers who have more favorable attitude towards additive free claim (Song and Im 2018). With respect to past study of additive free claim, the current study analyzes influence of additive free claim focusing on perceived healthiness, food types, and gender. The current study proposes that additive free claim holds positive and healthy meaning

which generates health halo effects which leads consumers perceive that food products healthier than when no such claim is made, perceived healthiness of food products with additive free claim is greater in unhealthy food products than in healthy food products, and perceived healthiness of food items labeled as “additive-free” is greater in females than in males. With respect to food types, the current paper also analyzes role of gender on perceived healthiness of food products with additive free claim as males and females have different approaches to health and food behaviors. It is important to analyze gender difference in perceived healthiness of food products with additive- free claim.

The current study can provide an important insight to marketers who focus on designing food products with additive- free claim. As the study will focus on showing influence of additive free claim on perceived healthiness of food products, perceived healthiness of food products with additive free claim with respect to food types (healthy and unhealthy). It will analyze perceived healthiness of food products with additive free claim with respect to gender which will guide marketers to also consider gender differences for effectively promoting additive free claim products. In other words, it will provide an idea for marketers to particularly focus on a gender for designing and promoting additive-free labeled food products effectively.

The current study will also provide an important insight to public health policy makers of how additive free claim can influence on perceived healthiness of food products and what possible effects can such claim lead on consumer's health and who (female or male) is most likely to be influenced by additive free claims. The paper consists of introduction, literature review and hypotheses, research methodology, research results, conclusion, limitations and future researches respectively.

2. Literature Review and Hypotheses

2.1 Additive-Free Claim

Food additives are substances which are added to food products to improve their intrinsic attributes and sensory functions (to increase shelf life by reducing perishability, to enhance taste, restore colors etc. (Carocho et al. 2015, Emerton and Choi 2008, Saltmarsh 2013). Food additives have been used to improve flavor, prevent food poisoning, increase nutritional content. In the past, firms argued that food additives are harmless and used as a tool to promote purchases (Song and Im 2018). There have been mixed perspectives regarding food additives, on the one hand food additives are considered as essential tools to ensure safety, quality, extend shelf life, and enhance consumer appeal (Ilback and Busk 2000). On the other hand, food

additives are considered as harmful for health which have been associated with food adulteration, use of inferior raw materials, poor processing techniques, and health problems such as allergic and intolerance reactions (Emerton and Choi 2008). However, since late 1970s consumers started to think that food additives such as artificial additives are harmful for health and hence their usages must be controlled (Brockman and Beren 2011). For instance, the food additives such as aspartame, colors, monosodium glutamate have been proven to have harmful health effects which increased consumers concern if such additives are used in a food (Carocho et al. 2014, Lofstedt, 2009, Mosby 2009). With the alarming health concerns about consumers, firms are now motivated to use additive free claim to attract consumers who want to avoid food chemicals (Song and Im 2018).

Additive free is a marketing claim which emphasizes that specific additives have been taken out from the product which is an effective marketing tool to signal the healthiness and safety of product by provoking fear regarding additives and hence encouraging consumers to purchase the products (Song and Im 2018). Although there is no common or established definition of clean label, clean label is often described as an approach which consists the labels such as “organic, natural” and “free from additives/preservatives” (Ingredion 2014) which indicate cleanliness of the

product to the consumers. Additive free is one of the types of clean labeling which is broadly used by consumers and marketers to describe label claiming that a food is minimally processed and doesn't contain certain additives or allergen (Gurnani 2014, Hutt and Sloan 2015). Additive free is linked to perceptions of naturalness (Rozin et al. 2009), additive free is considered as vital component of food products connected to naturalness, healthiness, well-being and quality of life (Bredahl 1999).

Past researches show that attractive sounding labels (e.g. organic, natural, fair trade, low-fat) prevalent in food packaging create health halo effects and lead consumers to overgeneralize and perceive that target product has favorable characteristics on many other attribute dimensions which lead consumers to perceive products to be healthier (Chandon and Wansink 2007a, Schuldt et al. 2012, Sutterlin and Siegrist 2015). A health halo effect occurs when perception of an attribute of a product influences health evaluation of an unrelated product attribute (Roe et al. 1999). Health halo is related to inference making which is widely used in food products where consumers are provided information on only one or two key attributes (Burton et al 2014, Wansink and Chandon 2006) resulting consumers to use such information into wide unrelated product attributes such as calorie, sodium, fat content (Roe et al. 1999). There is also negative effect of health

halo effect, as it leads consumers to believe products are “healthy” when in actually they are not, as a result federal regulators are concerned that some packaged foods that promote healthy benefits are not more healthful than their regular alternatives (Bui et al 2015).

When the product was labeled as “organic”, it leads to more favorable inference about product attributes such as low calorie, low fat, good ingredient (Schuldt and Schwarz 2010). Similarly, when the product is labeled as organic, it is perceived to have low calorie and healthier, which leads people to overeat and hence leads to obesity (Chandon and Wansink 2007a). The product labeled as fruit sugar was considered to be healthier than product labeled as sugar, study showed that “fruit” created halo effect and hence increased perceived healthiness of product (Sutterlin and Siegrist 2015). Perceived healthiness is defined as a consumer’s expectation of a product’s influence on his or her state of health (Howlett et al. 2009). When chocolate packaging was labeled as “fair trade”, consumers perceived chocolate as having lower calories and healthier even though fair trade means that all farmers are treated fairly and has no relation towards product ingredients, such fair trade labelling on chocolate packaging created health halo effects which resulted in more favorable inferences about chocolate’s ingredients (Schuldt et al. 2012). Song and Im (2018) demonstrated that

when additive free claim is presented on food products, it generates positivity and health halo effects for food products where people evaluated food products more favorably even in attributes which are irrelevant to the claim (Song and Im 2018). with such claim than without such claim. The current study proposes that additive-free claim holds positive and healthy meaning which generates health halo effects making consumers perceive that products are healthier than when no such claim is made. In other words, additive free claim creates health halo effects which leads to increase perceived healthiness of food products.

Hypothesis 1: Perceived healthiness of food products is greater in presence of additive free claim than without additive free claim.

2.2 Food Type

Consumers have an inherent tendency to categorize products as healthy or unhealthy (Chernev and Gal 2010) depending on two contrasting goals such as hedonic goal (desiring pleasure from tastes) and utilitarian goal (desiring health benefits) (Chandon and Wansink 2007). Healthy foods are associated with products having natural, low fat, low calories, low salt, or sugar content which is predominantly driven by utilitarian view such as

healthier diets, losing weight, managing metabolic diseases like blood pressure, diabetes (Hamilton et al. 2000), but is often associated with lower hedonic evaluation and decreased satiating properties (Lee et al 2013, Raghunath et al. 2006). On the other hand, unhealthy foods are associated with high calorie, high fat, high sugar, having descriptors such as creamy, rich and so on (Chernev and Gal 2010). The positivity and halo effect of food product with additive free claim is greater in presence of additive free claims than without additive free claims, but effect of how additive free claim increases positivity and halo effect can vary with respect to food types (Song and Im 2018). When additive free claims have a positive and healthy image and when such claims are made on healthy food products, consumers evaluate products more positively and favorably because an additive free claim complement healthy products and result in even more favorable evaluation of healthy product, the positive evaluation even extends to other aspects of product which are irrelevant to excluded additives in the claim (Song and Im 2018). When health claim such as high in calcium was attached in yogurt (which is considered as a healthy food product) consumers rated yogurt to be healthier and more likely to purchase it than yogurt without such health claims (Roe et al. 1999) which suggests that health claim increased perceived healthiness of a healthy product.

In context of unhealthy food products, people indicate unhealthy food products as an indulgence in hedonic consumption which makes consumers feel guilty when they eat unhealthy items; as a result, consumers tend to justify their guilt by putting efforts in finding evidence that rationalizes hedonic consumption than utilitarian consumption (Khan and Dhar 2006) because consumers making hedonic choices exhibit higher guilt than consumers making utilitarian choices (Kivetz and Keinan 2006). People perceive a meal to be healthier when it is combined with “virtue (healthy)” and “vice (unhealthy)” than when presented with vice alone (Chernev 2011). When healthy and unhealthy items are presented together or in a unified set, individuals evaluate unhealthy items more favorably than healthy items, as including healthy food with unhealthy food helped consumers to perceive dynamic of balance in their underlying motivations and justify their reduced guilt which led consumers to evaluate unhealthy foods more favorably than healthy ones (Fishback and Zhang 2008). Ares and Gambaro (2007) found adding functional ingredient or enrichments inherent in original product can increase perceived healthiness of the products, such as adding calcium in yogurt and milk, antioxidants in honey, adding to that the study also showed that relative utility for calcium in dulce de leche was higher than that for calcium in yogurt because dulce de leche is

perceived as less healthy than yogurt, and the addition of calcium decreases unhealthy image more than it increased healthy image of yogurt. This implies that adding inherent enrichments on less healthy foods can increase perceived healthiness of less healthy functional foods comparatively more than healthy functional foods. When food products were labeled as organic, consumers evaluated products to have fewer calories, high willingness to pay, and greater nutritional evaluations; however products perceived as unhealthy (potato chips and cookies) labeled as organic were evaluated more favorably as having fewer calories, high willingness to pay, and high nutrition compared to healthy product (yogurt) (Lee et al. 2013). Song and Im 2018 study show that although positivity effect and halo effect of additive free claim was greater in healthy products than in unhealthy products, the difference between groups (experiment vs. control) was greater for unhealthy products than for healthy products suggesting that additive free claim reduces consumers guilt of consuming unhealthy food products by making consumers assess product more positively even in factors unrelated to excluded additives which means that additive free claim decreased undesirable image of unhealthy product more than it increased healthy image of healthy products (Song and Im 2018). Food products labeled as reduced fat were perceived to be healthier which led people to

increase portion size as participants were shown to have lower consumption guilt having foods with reduced fat claim than food products which were not labeled as reduced fat especially to foods which are perceived as unhealthy (Faulkner et al. 2013).

Hence, the current study proposes that the healthy and safe image of additive free claim will generate health halo effect which will increase perceived healthiness of healthy food product as well as unhealthy food products, however perceived healthiness of additive free claim will be greater in unhealthy food products than healthy food products because additive free claim will reduce consumers guilt by making consumers positively evaluate products even unrelated to excluded additives which leads to decrease undesirable image of unhealthy food products more than it increases healthiness image of healthy food products.

Hypothesis 2: Perceived healthiness of food products with additive free claim is greater in unhealthy foods than in healthy foods.

2.3 Gender

Males and females have different perspectives and priorities towards food and health which is based on different attitudes and beliefs (Dobscha

and Ozanne 2001). On the one hand, there is a growing consciousness about relationship between food and health among people (Sanchez et al. 2001), the consciousness can be different with respect to males and females (Pollard and Hyatt 1999). Past researches indicate that females are more receptive to health promotion campaigns, health enhancing food advertisements (Bogue and Sorenson 2001) and have higher interest in diet and health issues than males (Monnesue et al. 1997). Females are more health conscious and tend to avoid high fat foods, high caloric foods, prefer natural, unmodified foods and attach greater importance to healthy eating than males (Wardle et al. 2004). Rappoport et al 1993 indicated that females placed higher importance on healthy food while males placed greater importance on a food's intrinsic pleasure. Females have greater knowledge of dietary and health related issues (Buttriss 1997 and Turrell 1997).

Health consciousness is an "individual difference variable that assesses the degree to which a person plays an active role in maintaining his or her health." (Gould 1988, Naylor et al. 2009). Health consciousness is a motivational component that encourages consumers to enhance or sustain their state of physical well-being by engaging in preventive behaviors and health care (Jayanti and Burns 1998; Michaelidou et al. 2012, Hassan 2008). Mai and Hoffmann (2012) show that health-conscious consumers are more

willing to elaborate on health-related product attributes (e.g., nutrition facts), emphasize on food naturalness (e.g., nongenetically engineered. Health consciousness is related to high sensitivity to food cues that indicate healthiness, the degree of health consciousness degree to which consumers are interested in their health and motivated to engage in preventive behaviors and health care (Naylor et al. 2009). The higher the degree of health consciousness, the more strongly consumers base their healthiness expectations on a food product's labelling or food cues that indicate healthiness (Mai and Hoffman 2015). Health conscious consumers are more likely to base healthiness perceptions on food cues that indicate healthiness than less health-conscious consumers. The findings show that yogurt labelled with reduced fat and reduced sugar were perceived healthier by health-conscious consumers than less health-conscious consumers (Mai and Hoffman 2012). Past studies have shown that foods labeled with low calorie and low-fat foods were rated as more healthful by health conscious groups than less health conscious groups (Oakes and Slotterback 2001c). Past research asserted that more health concerned consumers are more likely to fall into health-related cues resulting into overconsumption compared with less health concerned consumers, Cherner 2011 found that more health concerned consumers were more likely to fall into health biases of negative

calorie illusion leading to underestimate calories of a set of healthy and unhealthy meals than calories of an unhealthy meal alone than less health concerned consumers which indicate how health concerned consumers are more sensitive or more likely to fall into health cues than low health conscious consumers. When cookies were presented with healthful claims such as low saturated fat, free from trans-fat, and high fiber oatmeal cookies, health conscious consumers perceived it to be healthier than less-health conscious consumers (Gravel et al. 2012). These findings suggest that high health conscious consumers are more likely to be influenced by labeling cues which indicate healthiness of a food product than low health conscious consumers.

Since, health conscious people are more sensitive towards food cues or food labels indicating healthiness of food products, they are more likely to be influenced by health halo effects and since females are more health conscious than males, the paper proposes that under additive free claim, females are more likely to be influenced by health halo effects of additive free claim than males suggesting that perceived healthiness of food products with additive free claim is higher in females than males.

Hypothesis 3: Perceived healthiness of food products with additive free claim is greater in females than in males.

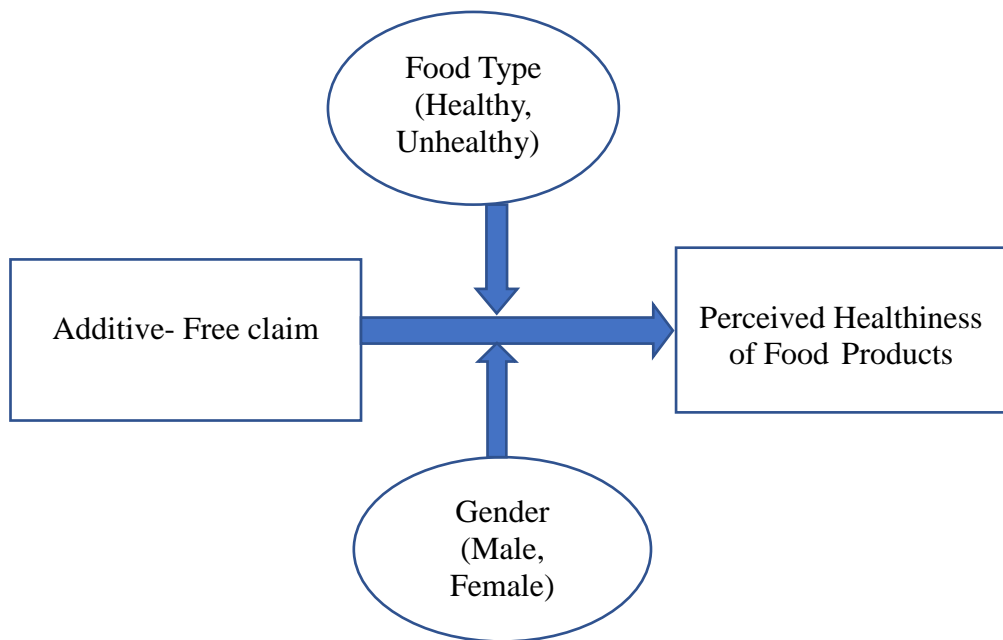


Fig 1: Conceptual Model

3. Research Methodology

3.1 Procedure

In order to check perceived healthiness of food products with additive free claim according to food type which is healthy and unhealthy; yogurt was chosen as healthy food and potato chips as an unhealthy food which are also frequently used in other health and food marketing researches (Devcich et al. 2007, Lee et al. 2013, Song and Im 2018). Under potato chips, the additive free claim such as “No Artificial Flavors” and “No MSG” were used whereas under yogurt, additive-free claim such as “No Artificial Flavors” and “No Artificial Sweeteners” were used, such additive claims were also used in Song and Im 2018 study. While selecting yogurt and potato chips, it was made sure that the yogurt and potato chips are plain without any flavors such as strawberry yogurt, blueberry yogurt, barbecue potato chips, cheese potato chips etc. to prevent any kind of flavor effects.

The study consisted of two groups; Group 1 (control): yogurt and potato chips images without additive free claim, Group 2 (experimental): yogurt and potato chips images with additive free claim. The study was conducted through online named Google form where a total of 105 participants participated, where participants were randomly assigned to any

of the two groups. In each group, the questionnaire was divided into five sections. First, participants were provided with introduction and brief instruction to fill survey. Section A included manipulation check where participants were asked to rate healthiness of yogurt and potato chips on three items using 7-point semantic differential scale to check that yogurt is perceived as healthy product and potato chips as an unhealthy product.

Under section B, participants were presented with yogurt image with or without additive free claim with respect to group type and were presented with an imaginary situation of purchasing a product in a supermarket and observe product image carefully and rate healthiness of a product on seven items using 7- point Likert scale. Under section C, participants were presented with potato chips images with or without additive free claim with respect to group type and were presented with an imaginary situation of purchasing a product in a supermarket and observe product image carefully and rate healthiness of a product on seven items on seven items using a 7-point Likert scale. Section D, participants were asked to measure their attitudes towards no additives on two items using 7-point Likert scale, attitude towards food additives on two items using 7-point Likert Scale, and product involvement on two items using a 7-point Likert scale. Under section E, participants were asked to provide information such as gender,

age, current employment status, and highest level of education respectively. In both groups, questionnaire had same sections except section B and C where group 1 had no additive-free claim but group 2 had additive-free claims on yogurt and potato chips.

Measures

Three items were used to measure healthiness of yogurt and potato chips on a 7-point semantic differential scale for the purpose of manipulation check (Adams and Geuens 2007) (Cronbach's $\alpha = 0.808$). I think Yogurt/potato chips is/are (very unhealthy =1, very healthy=7). I think yogurt/potato chips has/have (very low nutritional value=1, very high nutritional value =7). I think yogurt/ potato chips is/are (very bad for my body =1, very good for my body =7) (Cronbach's $\alpha = 0.808$)

Seven items were used to measure perceived healthiness of yogurt and potato chips with/without additive free claims using 7-point Likert scale (Kim et al. 2013) (Cronbach's $\alpha = 0.914$). The product looks nutritious (Totally disagree =1, totally agree =7). The products look like it used good ingredients (Totally disagree=1, totally agree = 7). The product looks healthy (Totally disagree=1, totally agree =7). The product looks like it used natural ingredients (Totally disagree=1, totally agree =7). It looks like a

good quality product (Totally disagree=1, totally agree =7). It looks like it has low calories (Totally disagree=1, totally agree =7). It looks like it includes low fat content (Totally disagree=1, totally agree =7)

Two items were used to measure attitude towards no additive products using 7-point Likert scale (Song and Im 2018) (Pearson $r = 0.82$). No additive products are attractive (Totally disagree =1, totally agree =7). No additives products are important (Totally disagree =1, totally agree =7). Two items were used to measure attitude towards food additives using 7-point semantic differential scale (Song and Im 2018) (Pearson $r = 0.79$) How do food additives affect human health? (Very harmful =1, very beneficial =7) How do you feel about food additives? (Very unsafe=1, very safe=7). Two items were used to measure product involvement using 7-point Likert scale (Song and Im 2018) (for yogurt: Pearson $r = 0.81$, for potato chips: Pearson $r = 0.89$). Yogurt/Potato chips is/are an important product to me (totally disagree=1, totally agree= 7). I have a lot of interest in yogurt/potato chips. (Totally disagree =1, totally agree=7)

3.2 Participants

The research was conducted through online survey namely Google Form where total of 105 participants participated in the survey. Since, gender was an important aspect of current study, males and females were carefully distributed under experimental and control group. A Total of 52 males (Experimental group: 25 (47%), Control group: 27 (52%)), and a total of 53 females (Experimental group: 28 (53%) Control group: 25 (48%)) participated age ranging from 18 to 45 or above where majority of participants belonged to age ranging from 25-34, majority of participants' highest level of education was 4 year undergraduate degree, and majority of participants were employed full time as current employment status. Table 1 shows demographic information regarding gender, highest level of education, current employment status, and age respectively with respect to experimental group and control group.

Table 1: Demographic Table

| Demographics | Experimental Group | Control Group | Total |
|--------------------------------------|--------------------|-----------------|-----------------|
| 1. Gender | | | |
| Female | 28 (53%) | 25 (48%) | 53 (51%) |
| Male | 25 (47%) | 27 (52%) | 52 (49%) |
| 2. Highest Level of Education | | | |
| Less than high school | 0 | 0 | 0 |
| High School Graduate | 4 (7%) | 6 (13%) | 10 (10%) |
| Some college | 7 (12%) | 7 (15%) | 14 (13%) |
| 4 year undergraduate degree | 28 (47%) | 20 (44%) | 48 (45%) |
| Master's Degree | 18 (31%) | 11 (24%) | 29 (28%) |
| Doctorate | 2 (3%) | 2(4%) | 4 (4%) |
| 3. Current Employment Status | | | |
| Employed full time | 25 (46%) | 23 (45%) | 48 (46%) |
| Employed part time | 8 (15%) | 4 (8%) | 12 (11%) |
| Unemployed looking for job | 2 (4%) | 1 (2%) | 3 (3%) |
| Unemployed not looking for job | 1 (2%) | 2 (4%) | 3 (3%) |
| Retired | 1 (2%) | 1 (2%) | 2 (2%) |
| Student | 17 (31%) | 20 (39%) | 37 (35%) |
| 4. Age | | | |
| Under 18 | 0 | 0 | 0 |
| 18-24 | 7 (13%) | 14 (27%) | 21 (20%) |
| 25-34 | 28 (53%) | 27 (52%) | 55 (52%) |
| 35-44 | 14 (26%) | 8 (15%) | 22 (21%) |
| 45 or older | 4 (8%) | 3 (6%) | 7 (7%) |

In order to test hypotheses ANOVA was used, Independent T-test was used to test manipulation check by using IBM SPSS software.

4. Research Results

A total of 105 participants participated in the study, since each participant had two observations in each study ($N=210$; 105×2) respectively. In order to check manipulation check for product healthiness of yogurt and potato chips, an independent t-test was performed where yogurt ($M=5.78$, $SD=0.83$) and potato chips ($M=2.43$, $SD=1.22$), $t(208) = 23.25$, $p=0.00$ which showed that people perceived yogurt as healthy product and potato chips as an unhealthy product. Hence, the manipulation check was proved correct as yogurt was considered as healthy product and potato chips as an unhealthy product.

The study proposes hypothesis 1 as perceived healthiness of food products is higher in presence of additive free claim than without additive free claim. In order to test Hypothesis 1, one-way ANOVA was used where perceived healthiness was used as dependent variable and additive free claim as an independent variable. Table 2 shows result from one-way ANOVA, Table 3 shows mean scores of perceived healthiness of presence and (experimental) absence group (control) of additive free claim and fig 2 show difference in perceived healthiness between experimental and control group. The result showed significant main effect of additive free claim on

perceived healthiness indicating that participants in experimental group had higher perceived healthiness than participants in control group as $M_{\text{Presence}} = 4.24$ vs. $M_{\text{Absence}} = 3.81$; $F(1, 208) = 5.18$, $p = .024$. Table 3 and figure 2 show that perceived healthiness of food product is greater in experimental group than control group which supports our hypothesis 1 indicating that perceived healthiness of additive free claim is greater in presence of additive free claim than in absence of additive free claim.

Table 2: One-way ANOVA, analysis of additive free claim on perceived healthiness

Dependent Variable: Perceived healthiness

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|----------|------|
| Corrected Model | 9.927 ^a | 1 | 9.927 | 5.184 | .024 |
| Intercept | 3404.360 | 1 | 3404.360 | 1777.599 | .000 |
| Additive Free | 9.927 | 1 | 9.927 | 5.184 | .024 |
| Error | 398.350 | 208 | 1.915 | | |
| Total | 3816.449 | 210 | | | |
| Corrected Total | 408.278 | 209 | | | |

a. R Squared = .024 (Adjusted R Squared = .020)

Table 3: Mean scores of perceived healthiness in experimental and control group

Perceived Healthiness

| Additive Free | Mean | Std. Deviation | N |
|---------------|--------|----------------|-----|
| Absence | 3.8091 | 1.53638 | 104 |
| Presence | 4.2439 | 1.21586 | 106 |
| Total | 4.0286 | 1.39767 | 210 |

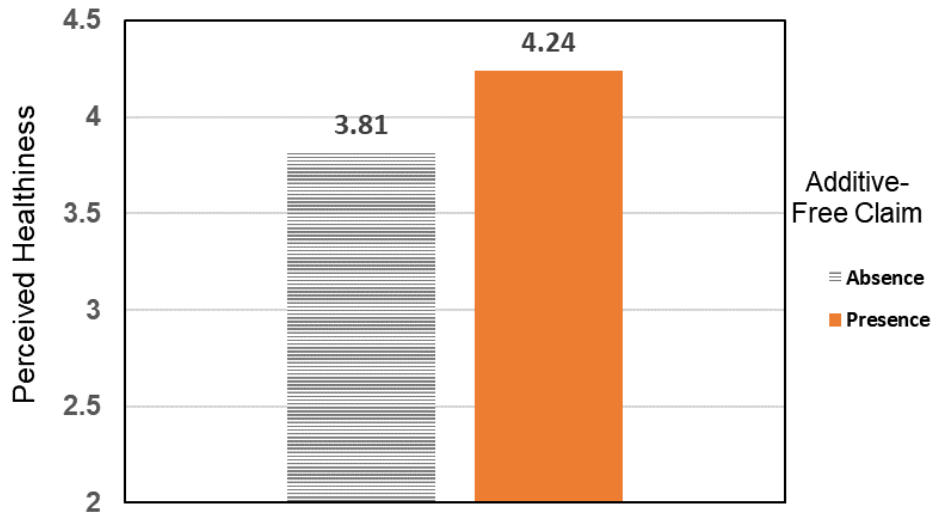


Fig 2: Difference in perceived healthiness between experimental and control group

Hypothesis 2 proposed that perceived healthiness of products with additive free claim is greater in unhealthy products than healthy products. In order to test Hypothesis 2, two- way ANOVA model was used where perceived healthiness was regarded as dependent variable, additive- free claim and food type as independent variables. Table 4 shows statistical value of two-way ANOVA analysis result and Table 5 shows means of perceived healthiness of additive free claim (absence and presence) by food type (healthy and unhealthy). The main effect of additive free claim on perceived healthiness is significant as ($M_{\text{Presence}} = 4.24$ vs. $M_{\text{Absence}} = 3.81$); $F(1, 206) = 10.063$, $p = 0.002$. Perceived healthiness was greater with additive free claim than without additive free claim. Main effect of food type is also significant

on perceived healthiness as ($M_{\text{Healthy}} = 4.97$, $M_{\text{Unhealthy}} = 3.08$; $F(1, 206) = 190.551$ $p = 0.000$), it showed that yogurt was perceived healthier than potato chips. There is a significant interaction effect between food types and additive free claim on perceived healthiness as $F(1, 206) = 5.19$, $p = 0.024$. Table 5 and Figure 3 show perceived healthiness was greater in experimental group in both healthy and unhealthy food items, however difference between groups (experimental vs. control) was greater for unhealthy food products ($M_{\text{Presence}} = 3.45$ vs. $M_{\text{Absence}} = 2.70$) than healthy food products ($M_{\text{Presence}} = 5.04$ vs. $M_{\text{Absence}} = 4.91$) which supports Hypothesis 2 that perceived healthiness of food products with additive free claim is greater in unhealthy foods than healthy foods. It implies that additive free claim through its positive and healthy image reduces consumer's consumption guilt for unhealthy food items more than it increases healthy image of healthy food products which suggests that additive free claim reduces unhealthy image of unhealthy food products more than it increases healthiness image of healthy food products.

Table 4: Two-way ANOVA between additive- free claim and food type on perceived healthiness

| Dependent Variable: Perceived Healthiness | | | | | |
|---|-------------------------|-----|-------------|----------|------|
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 203.719 ^a | 3 | 67.906 | 68.408 | .000 |
| Intercept | 3405.499 | 1 | 3405.499 | 3430.655 | .000 |
| Food type | 189.153 | 1 | 189.153 | 190.551 | .000 |
| Additive Free | 9.989 | 1 | 9.989 | 10.063 | .002 |
| Food Type × Additive Free | 5.153 | 1 | 5.153 | 5.191 | .024 |
| Error | 204.489 | 206 | .993 | | |
| Total | 3817.531 | 210 | | | |
| Corrected Total | 408.208 | 209 | | | |

a. R Squared = .499 (Adjusted R Squared = .492)

Table 5: Mean score of perceived healthiness by additive free claim by food type

| Dependent Variable: Perceived Healthiness | | | | |
|---|---------------|--------|----------------|-----|
| Food Type | Additive Free | Mean | Std. Deviation | N |
| Unhealthy | Absence | 2.7033 | 1.00970 | 52 |
| | Presence | 3.4528 | .77830 | 53 |
| | Total | 3.0816 | .97191 | 105 |
| Healthy | Absence | 4.9148 | 1.11996 | 52 |
| | Presence | 5.0377 | 1.04722 | 53 |
| | Total | 4.9769 | 1.08039 | 105 |

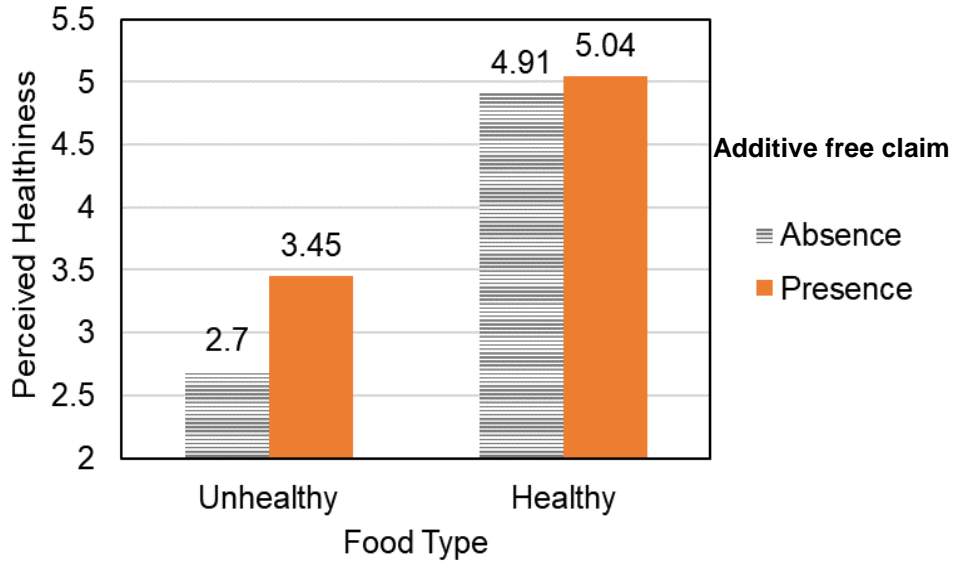


Fig 3: Two- way Interaction effect between additive free claim and food type

Our third hypothesis proposes that perceived healthiness of products with additive free claim is greater in females than males or difference between groups (experimental vs. control) is greater in females than in males. A two- way ANOVA was used to test the hypothesis 3, where gender and additive free were used as independent variables and perceived healthiness as a dependent variable. Table 6 shows two-way ANOVA analysis result. Table 7 shows mean scores of perceived healthiness by additive free claim (presence and absence) and by gender (male and female). The result shows that there is a significant main effect of additive free claim on perceived healthiness where ($M_{\text{Presence}} = 4.24$, vs. $M_{\text{Absence}} = 3.79$; $F(1,$

206) = 5.632, $p = .019$. The main effect of gender on perceived healthiness is marginally significant as ($M_{\text{Female}} = 3.85$ vs. $M_{\text{Male}} = 4.19$; $F(1, 206) = 3.162$, $p = .076$). The interaction effect between additive free claim and gender on perceived healthiness is marginally significant as $F(1, 206) = 3.146$, $p = .079$, which indicates that there is 92% probability of females being more influenced by additive free claim in food products than males. Table 7 and figure 4 show that perceived healthiness is greater in experimental group than control group. However, difference between experimental and control group in perceived healthiness of food products is greater in females than males (Females: $M_{\text{Presence}} = 4.24$ vs. $M_{\text{Absence}} = 3.46$, Males: $M_{\text{Presence}} = 4.25$ vs. $M_{\text{Absence}} = 4.13$) which support Hypothesis 3. The results indicate that perceived healthiness of food products with additive free claim is greater for females than males indicating that females are more likely to be influenced by additive free claims indicating healthiness than males.

Table 6: Two Way ANOVA between additive free and gender on perceived healthiness

Dependent Variable: Perceived Healthiness

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|------------------------|-------------------------|-----|-------------|----------|------|
| Corrected Model | 21.723 ^a | 3 | 7.241 | 3.859 | .010 |
| Intercept | 3386.671 | 1 | 3386.671 | 1805.124 | .000 |
| Additive Free | 10.566 | 1 | 10.566 | 5.632 | .019 |
| Gender | 5.932 | 1 | 5.932 | 3.162 | .076 |
| Additive Free × Gender | 5.903 | 1 | 5.903 | 3.146 | .079 |
| Error | 386.486 | 206 | 1.876 | | |
| Total | 3817.531 | 210 | | | |
| Corrected Total | 408.208 | 209 | | | |

a. R Squared = .053 (Adjusted R Squared = .039)

Table 7: Mean scores of perceived healthiness by additive free claim and by gender

Dependent Variable: Perceived Healthiness

| Additive Free | Gender | Mean | Std. Deviation | N |
|---------------|--------|--------|----------------|-----|
| Absence | Female | 3.4600 | 1.48638 | 50 |
| | Male | 4.1323 | 1.52425 | 54 |
| | Total | 3.8091 | 1.53638 | 104 |
| Presence | Female | 4.2423 | 1.06936 | 56 |
| | Male | 4.2457 | 1.37268 | 50 |
| | Total | 4.2439 | 1.21586 | 106 |

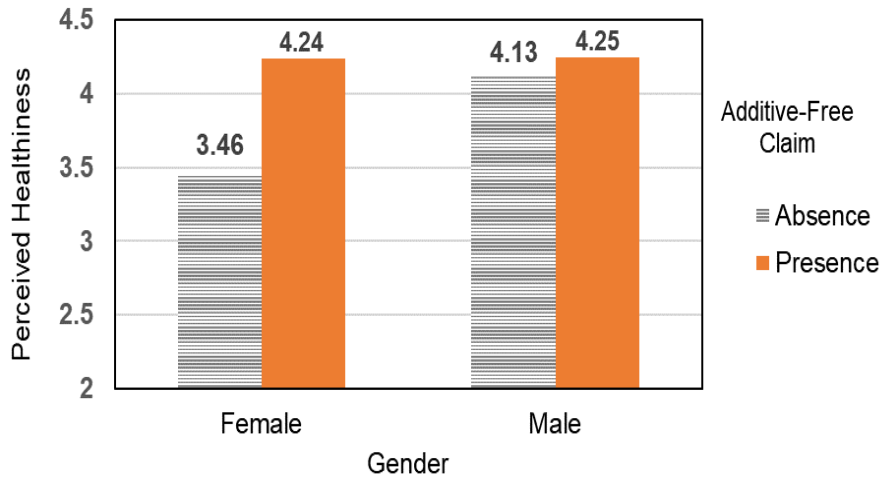


Fig 4: Two way interaction effect between additive- free claim and gender

Table 8 shows additional table which demonstrates three-way ANOVA analysis result where food type, additive free, and gender are used as independent variables and perceived healthiness as a dependent variable. The result shows that there is a significant main effect of additive free on perceived healthiness as $M_{\text{Presence}} = 4.24$ $M_{\text{Absence}} = 3.79$, $F(1, 202) = 11.02$, $p = 0.001$ which suggests that perceived healthiness is greater in presence of additive free claim than without additive free claim. There is a significant main effect of food type on perceived healthiness $M_{\text{Unhealthy}} = 3.07$ vs. $M_{\text{Healthy}} = 4.97$, $F(1, 202) = 198.56$, $p = 0.00$. There is a significant main effect of gender on perceived healthiness $M_{\text{Female}} = 3.85$ vs. $M_{\text{Male}} = 4.19$, F

(1, 202)= 6.27, $p= 0.01$. There is a significant interaction effect between additive free and food type on perceived healthiness $F(1, 202) = 5.30$, $p= 0.02$. The result shows that perceived healthiness is greater in experimental group in both healthy and unhealthy food items, however difference between groups (experimental vs. control) was greater for unhealthy food products ($M_{\text{Presence}}= 3.45$ vs. $M_{\text{Absence}} = 2.69$) than healthy food products ($M_{\text{Presence}}= 5.04$ vs. $M_{\text{Absence}}= 4.90$) which supports Hypothesis 2 that perceived healthiness of food products with additive free claim is greater in unhealthy foods than healthy foods. There is a significant interaction effect between additive free and gender as $F(1, 202) = 6.15$, $p= 0.01$. The perceived healthiness is greater in experimental group in both females and males. However, difference between experimental and control group is greater for females ($M_{\text{Presence}} = 4.24$ vs. $M_{\text{Absence}} = 3.46$) than males ($M_{\text{presence}} = 4.25$ vs. $M_{\text{Absence}} = 4.13$) which support Hypothesis 3. The result indicates that perceived healthiness of food products with additive free claim is greater for females than males suggesting that females are more likely to be influenced by additive free claims indicating healthiness than males. The results from Table 8 analysis also supports three hypotheses.

Table 8: Three Way ANOVA between additive free, food type, and gender on perceived healthiness

Tests of Between-Subjects Effects

| Dependent Variable: Perceived healthiness | | | | | |
|---|-------------------------|-----|-------------|----------|------|
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 215.700 ^a | 7 | 30.814 | 32.322 | .000 |
| Intercept | 3385.597 | 1 | 3385.597 | 3551.253 | .000 |
| Additive Free | 10.506 | 1 | 10.506 | 11.020 | .001 |
| Gender | 5.977 | 1 | 5.977 | 6.269 | .013 |
| Food Type | 189.331 | 1 | 189.331 | 198.595 | .000 |
| Additive Free × Gender | 5.858 | 1 | 5.858 | 6.145 | .014 |
| Additive Free × Food Type | 5.053 | 1 | 5.053 | 5.300 | .022 |
| Gender × Food Type | .025 | 1 | .025 | .027 | .870 |
| Additive Free × Gender × Food Type | .057 | 1 | .057 | .060 | .807 |
| Error | 192.577 | 202 | .953 | | |
| Total | 3816.449 | 210 | | | |
| Corrected Total | 408.278 | 209 | | | |
| a. R Squared = .528 (Adjusted R Squared = .512) | | | | | |

Dependent Variable: Perceived Healthiness

| Additive Free | Food Type | Mean | SD | |
|---------------|-----------|------|------|----|
| | | | | N |
| Absence | Potato | 2.69 | 0.14 | 52 |
| | Yogurt | 4.90 | 0.14 | 52 |
| Present | Potato | 3.45 | 0.13 | 53 |
| | Yogurt | 5.04 | 0.13 | 53 |

Dependent Variable: Perceived healthiness

| Additive Free | Gender | Mean | SD | N |
|---------------|--------|------|------|----|
| | | | | |
| Absence | Female | 3.46 | 0.14 | 50 |
| | Male | 4.13 | 0.13 | 54 |
| Present | Female | 4.24 | 0.13 | 56 |
| | Male | 4.25 | 0.14 | 50 |

5. Conclusion

The results of this study suggest that perceived healthiness of food products is greater with additive free claim than without additive free claim which implies that additive free claim through its positive and healthy meaning creates health halo effect which leads to increase perceived healthiness of food products. It also suggests that perceived healthiness of product with additive free claim is greater for unhealthy food products than healthy food products which indicates that additive free claim reduces unhealthy image of unhealthy food products more than it increases healthy image of healthy products. It suggests that additive free claim with its healthy image lets consumers justify their guilt of hedonic consumption. The findings demonstrated that difference in perceived healthiness between experimental and control groups was greater for females than males which imply that females' perceived healthiness of food products with additive

free claim is greater than males. It suggests that since females are more health conscious than males, females are more likely to base their healthiness expectations from labeling cues indicating healthiness such as additive free claim than males. With respect to past study on positivity and health halo effect created by additive free claim on food products, the current study on additive-free claim further supports findings that when food products are attached with additive free claim; additive free claim through its positive and healthy meaning creates health halo effects and increases perceived healthiness of food products, where intensity is greater in unhealthy foods than in healthy foods, and females showing greater perceived healthiness of food products with additive free claim than males.

From a marketing perspective, the current study findings imply that attaching additive free claim on food products can be an effective marketing strategy to influence consumers to increase perceived healthiness of food products in a growing health concern society. Since, people feel guilty of consuming unhealthy foods products, the current study will provide an important insight to marketers who wish to market unhealthy food products by using additive free claim as it reduces undesirable image of unhealthy products making it seem less unhealthy and reducing their guilt of consuming unhealthy food products. The findings also suggest that adding

additive free claim is more effective for unhealthy foods than healthy foods. Similarly, the findings also suggest that while designing additive free claim products, it is important to focus on gender differences; since females are more health conscious and base healthiness expectations on labeling cues, they are more influenced by additive free claims than males. Hence, the finding suggests marketers to focus on females while designing food products with additive- free claim.

Whereas from public health field perspective, these findings show how attaching additive free claim can increase perceived healthiness of food products as additive free claim holds positive image creating health halo effects in other irrelevant aspects and hence leading to increase perceived healthiness even if healthiness of food product is not actually increased. It also suggests that additive free claim can encourage consumption of unhealthy foods through reduction of consumption guilt which can create greater risk to consumer's health. The research results suggest that females are more sensitive to labeling cues which indicate healthiness such as additive free claim, they are more likely to be influenced by additive free claims than males.

With growing health concern, additive free claim generates a good opportunity for marketers to increase perceived healthiness of food products

However, it is also important that marketers do not mis utilize this health halo effects created by additive free claim in an unethical manner at the cost of consumer's health. Hence, marketers should cooperate with public health policy makers on how to properly design additive free claim products without risking health of consumers.

6. Limitations and Future Research

Since, current study was conducted online, there is high probability that participants might not give their serious responses as they can easily get distractions from surroundings and hence randomly give their responses just to finish survey. Similarly, since scenario explained in survey cannot exactly replicate a real shopping environment in which consumers are fully engaged in the decision-making process, participants might not get genuine feeling of food products with additive free claim and participants might also be subjected to various distractions which can lead them to answer in a random manner. Current study assessed only two items (potato chips and yogurt) as healthy and unhealthy foods to test hypothesis such as perceived healthiness of food products with additive free claim is greater in unhealthy foods than healthy foods. However, accessing only two items is not enough to generalize result for whole healthy and unhealthy food items.

For the further research, more than two items perceived as healthy and unhealthy should be considered to further support generalization that perceived healthiness of food products with additive free claim is greater in unhealthy food products than healthy food products. Although study primarily focused on perceived healthiness of products with additive free claim, it didn't measure willingness to buy that product. Past research shows

that products which are perceived to be healthier are not considered to be tasty which affect consumers' willingness to buy that product. Hence, it is important to conduct further research about how increased perceived healthiness can influence willingness to buy the product. The current study used additive free claims such as "No Artificial flavors, No Artificial Sweeteners" in case of healthy food condition and "No Artificial Flavors" and "No MSG" in case of unhealthy food condition, future research should be done on how other additive free claims such as "No Nitrate", "No Added Colors" can influence perceived healthiness of food products with respect to food types. The present research focuses on additive free claims on packaged food products, additive free claims have also been used in restaurants, future researches should be done on how additive free claims can influence perceived healthiness of foods prepared in restaurants which will give broader influence of additive free claim on perceived healthiness of food items in restaurants as well as packaged food products. Examining additive free claim influence on restaurant foods is important as consumers are increasingly spending their food budget at restaurants (Jekanowski 1999). Additive free claim has also been used in non-food items such as cosmetics, baby products, shampoo etc. future research should be conducted on additive-free claim influence on perceived healthiness of non-food products.

7. Bibliography

- Adams, L., & Geuens, M. (2007). Healthy or unhealthy slogans: That's the question.... *Journal of health communication*, 12(2), 173-185.
- Ares, G., & Gámbaro, A. (2007). Influence of gender, age and motives underlying food choice on perceived healthiness and willingness to try functional foods. *Appetite*, 49(1), 148-158.
- Barr, S. I. (1989). Nutrition in food advertising: content analysis of a Canadian women's magazine, 1928–1986. *Journal of Nutrition Education*, 21(2), 64-72.
- Bech-Larsen, T., & Grunert, K. G. (2003). The perceived healthiness of functional foods: A conjoint study of Danish, Finnish and American consumers' perception of functional foods. *Appetite*, 40(1), 9-14.
- Bogue, J., & Sorenson, D. (2001). *An exploratory study of consumers' attitudes towards health-enhancing foods*. Department of Food Business and Development, University College, Cork.
- Bredahl, L. (1999). Consumers» Cognitions with regard to genetically modified foods. Results of a qualitative study in four countries. *Appetite*, 33(3), 343-360.
- Brockman, C., & Beeren, C. J. M. (2011). Additives in dairy foods| consumer perceptions of additives in dairy products.
- Bruner, G. C., Griffith, D. A., Adjei, M. T., Noble, S. M., & Fraedrich, J. (1988). Marketing scales handbook: Multi-item measures for consumer insight research (Volume 7). *Journal of Consumer Marketing*, 5(1), 53-63.
- Burton, S., Tangari, A. H., Howlett, E., & Turri, A. M. (2014). How the perceived healthfulness of restaurant menu items influences sodium and calorie misperceptions: Implications for nutrition disclosures in chain restaurants. *Journal of Consumer Affairs*, 48(1), 62-95.

- Bui, M., Kemp, E., & Hamilton, M. (2015). The power of promoting healthy brands: familiarity in healthy product decision making. *Journal of Promotion Management*, 21(6), 739-759.
- Buttriss, J. L. (1997). Food and nutrition: attitudes, beliefs, and knowledge in the United Kingdom. *The American journal of clinical nutrition*, 65(6), 1985S-1995S..
- Byrd-Bredbenner, C., & Grasso, D. (2001). The effects of food advertising policy on televised nutrient content claims and health claims. *Family Economics and Nutrition Review*, 13(1), 37.
- Carocho, M., Barreiro, M. F., Morales, P., & Ferreira, I. C. (2014). Adding molecules to food, pros and cons: A review on synthetic and natural food additives. *Comprehensive reviews in food science and food safety*, 13(4), 377-399.
- Carocho, M., Morales, P., & Ferreira, I. C. (2015). Natural food additives: Quo vadis?. *Trends in Food Science & Technology*, 45(2), 284-295.
- Chandon, P., & Wansink, B. (2007). The biasing health halos of fast-food restaurant health claims: lower calorie estimates and higher side-dish consumption intentions. *Journal of Consumer Research*, 34(3), 301-314.
- Chernev, A. (2011). The dieter's paradox. *Journal of Consumer Psychology*, 21(2), 178-183.
- Chernev, A., & Gal, D. (2010). Categorization effects in value judgments: Averaging bias in evaluating combinations of vices and virtues. *Journal of Marketing Research*, 47(4), 738-747.
- Devcich, D. A., Pedersen, I. K., & Petrie, K. J. (2007). You eat what you are: Modern health worries and the acceptance of natural and synthetic additives in functional foods. *Appetite*, 48(3), 333-337.
- Emerton, V., & Choi, E. (2008). In Leatherhead Food International (Ed.), Essential guide to food additives. The Royal Society of Chemistry.

- Emerton, V., & Choi, E. (2008). *Essential guide to food additives*. Royal Society of Chemistry.
- Gould, S. J. (1988). Consumer attitudes toward health and health care: A differential perspective. *Journal of Consumer Affairs*, 22(1), 96-118.
- Gravel, K., Doucet, É., Herman, C. P., Pomerleau, S., Bourlaud, A. S., & Provencher, V. (2012). "Healthy," "diet," or "hedonic". How nutrition claims affect food-related perceptions and intake?. *Appetite*, 59(3), 877-884.
- Gurnani A. 2014. Treading the 'clean label' trend. Natural Products Insider. (Available at <https://www.naturalproductsinsider.com/articles/2014/08/treading-the-clean-label-trend.aspx>)
- Hamilton, J., Knox, B., Hill, D., & Parr, H. (2000). Reduced fat products—consumer perceptions and preferences. *British Food Journal*, 102(7), 494-506.
- Hickman, B. W., Gates, G. E., & Dowdy, R. P. (1993). Nutrition claims in advertising: a study of four women's magazines. *Journal of Nutrition Education*, 25(5), 227-235.
- Hutt CA, Sloan AE. 2015. Coming clean: What clean label means for consumers and industry. Global Food Forum Clean Label Conference. (Available at http://www.globalfoodforums.com/wp-content/uploads/2015/04/Natural-to-Non-GMO-Regulators-Consumers-C.Adams_.pdf)
- Ilbäck, N. G., & Busk, L. (2000). Food additives. Use, intake and safety. *Näringsforskning*, 44(1), 141-149.
- Ingredion (2014). The clean label guide in Europe. Retrieved from <http://www.alimentatec.com/wp-content/uploads/2014/10/The-Clean-Label-Guide-To-Europe.pdf>.
- Jackson, K. D., Howie, L. D., & Akinbami, L. J. (2013). Trends in allergic conditions among children: United States, 1997-2011.
- Jayanti, R. K., & Burns, A. C. (1998). The antecedents of preventive health care behavior:

- An empirical study. *Journal of the academy of marketing science*, 26(1), 6-15.
- Khan, U., & Dhar, R. (2006). Licensing effect in consumer choice. *Journal of marketing research*, 43(2), 259-266.
- Kim, H. J., Park, J., Kim, M. J., & Ryu, K. (2013). Does perceived restaurant food healthiness matter? Its influence on value, satisfaction and revisit intentions in restaurant operations in South Korea. *International Journal of Hospitality Management*, 33, 397-405.
- Jekanowski, M. D. (1999). Causes and consequences of fast food sales growth. *Food Review: The Magazine of Food Economics*, 22(1482-2017-3414), 11.
- Kivetz, R., & Keinan, A. (2006). Repenting hyperopia: An analysis of self-control regrets. *Journal of Consumer Research*, 33(2), 273-282.
- Klassen, M. L., Wauer, S. M., & Cassel, S. (1990). Increases in health and weight loss claims in food advertising in the eighties. *Journal of Advertising Research*.
- Lee, H. K. (2012). Consumers' awareness of food additives. *Safe food*, 7(2), 21-25.
- Lee, W. C. J., Shimizu, M., Kniffin, K. M., & Wansink, B. (2013). You taste what you see: Do organic labels bias taste perceptions?. *Food Quality and Preference*, 29(1), 33-39.
- Lee, W. C. J., Shimizu, M., Kniffin, K. M., & Wansink, B. (2013). You taste what you see: Do organic labels bias taste perceptions?. *Food Quality and Preference*, 29(1), 33-39.
- Lofstedt, R. (2009). Risk communication and the FSA: The food colourings case. *Journal of Risk Research*, 12(5), 537-557.
- Lord, J.B., Eastlack, J.O., Jr & Stanton, J.L., Jr (1987) Health claims in food advertising: is there a bandwagon effect? *Journal of Advertising Research*, 27 (April/ May), pp.

9–15.

- Mai, R., & Hoffmann, S. (2012). Taste lovers versus nutrition fact seekers: how health consciousness and self-efficacy determine the way consumers choose food products. *Journal of Consumer Behaviour*, 11(4), 316-328.
- Mai, R., & Hoffmann, S. (2015). How to combat the unhealthy= tasty intuition: The influencing role of health consciousness. *Journal of Public Policy & Marketing*, 34(1), 63-83..
- Michaelidou, N., & Hassan, L. M. (2008). The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food. *International journal of consumer studies*, 32(2), 163-170.
- Michaelidou, N., Christodoulides, G., & Torova, K. (2012). Determinants of healthy eating: a cross-national study on motives and barriers. *International Journal of Consumer Studies*, 36(1), 17-22.
- Monneuse, M. O., Bellisle, F., & Koppert, G. (1997). Eating habits, food and health related attitudes and beliefs reported by French students. *European journal of clinical nutrition*, 51(1), 46.
- Mosby, I. (2009). 'That Won-Ton Soup Headache': The Chinese Restaurant Syndrome, MSG and the Making of American Food, 1968–1980. *Social History of Medicine*, 22(1), 133-151.
- Nadia Shaheen Koyratty, B., Aumjaud, B., & Amnee Neeliah, S. (2014). Food additive control: a survey among selected consumers and manufacturers. *British Food Journal*, 116(2), 353-372.
- Naylor, R. W., Droms, C. M., & Haws, K. L. (2009). Eating with a purpose: Consumer response to functional food health claims in conflicting versus complementary information environments. *Journal of Public Policy & Marketing*, 28(2), 221-233.
- Oakes, M. E., & Slotterback, C. S. (2001c). What's in a name? A comparison of men's and women's judgements about food names and their nutrient contents. *Appetite*, 36(1), 29–40
- Okada, E. M. (2005). Justification effects on consumer choice of hedonic and utilitarian

- goods. *Journal of marketing research*, 42(1), 43-53.
- Prescott, S. L., Pawankar, R., Allen, K. J., Campbell, D. E., Sinn, J. K., Fiocchi, A., ... & Lee, B. W. (2013). A global survey of changing patterns of food allergy burden in children. *World Allergy Organization Journal*, 6(1), 1.
- Raghunathan, R., Naylor, R. W., & Hoyer, W. D. (2006). The unhealthy= tasty intuition and its effects on taste inferences, enjoyment, and choice of food products. *Journal of Marketing*, 70(4), 170-184.
- Roe, B., Levy, A. S., & Derby, B. M. (1999). The impact of health claims on consumer search and product evaluation outcomes: results from FDA experimental data. *Journal of Public Policy & Marketing*, 18(1), 89-105.
- Rozin, P., Fischler, C., & Shields-Argelès, C. (2009). Additivity dominance: Additives are more potent and more often lexicalized across languages than are "subtractives". *Judgment and Decision Making*, 4(6), 475.
- Saltmarsh, M., & Saltmarsh, M. (Eds.). (2013). *Essential guide to food additives*. Royal Society of Chemistry.
- Schuldt, J. P. (2013). Does green mean healthy? Nutrition label color affects perceptions of healthfulness. *Health communication*, 28(8), 814-821.
- Schuldt, J. P., & Schwarz, N. (2010). The "organic" path to obesity? Organic claims influence calorie judgments and exercise recommendations. *Judgment and Decision Making*, 5, 144-150.
- Schuldt, J. P., Muller, D., & Schwarz, N. (2012). The "fair trade" effect: Health halos from social ethics claims. *Social Psychological and Personality Science*, 3(5), 581-589.
- Shim, S. M., Seo, S. H., Lee, Y., Moon, G. I., Kim, M. S., & Park, J. H. (2011). Consumers' knowledge and safety perceptions of food additives: Evaluation on the effectiveness of transmitting information on preservatives. *Food Control*, 22(7),

1054-1060.

- Song, M. R., & Im, M. (2018). Moderating effects of food type and consumers' attitude on the evaluation of food items labeled "additive-free". *Journal of Consumer Behaviour*, 17(1), e1-e12.
- Sütterlin, B., & Siegrist, M. (2015). Simply adding the word "fruit" makes sugar healthier: The misleading effect of symbolic information on the perceived healthiness of food. *Appetite*, 95, 252-261.
- Tijssen, I., Zandstra, E. H., de Graaf, C., & Jager, G. (2017). Why a 'light' product package should not be light blue: Effects of package colour on perceived healthiness and attractiveness of sugar-and fat-reduced products. *Food quality and preference*, 59, 46-58.
- Tristano, D. (2015). 6.6. Subway, taco bell and the changing definitions of health. (Available at: <http://www.forbes.com/sites/darrentristano/2015/06/05/subway-taco-bell-and-the-changing-definitions-of-health/>).
- Turrell, G. (1997). Determinants of gender differences in dietary behavior. *Nutrition Research*, 17(7), 1105-1120.
- Wansink, Brian and Pierre Chandon (2006), "Can 'Low-Fat' Labels Lead to Obesity?" *Journal of Marketing Research*, 43 (November), 605-617.
- Wardle, J., Haase, A. M., Steptoe, A., Nillapun, M., Jonwutiwes, K., & Bellis, F. (2004). Gender differences in food choice: the contribution of health beliefs and dieting. *Annals of behavioral medicine*, 27(2), 107-116.
- World Health Organization (2011). Global health and aging (National Institute on Aging National Institutes of Health and World Health Organization report).

8. Appendix

A Research on Perceived Healthiness of Food Products (Group 1)

I am Era Pradhan, a Master student of Business Administration (Marketing) at Seoul National University. This questionnaire is for my graduation thesis which focuses on consumer's beliefs or perceptions about healthiness of food products. Please read every questions and answer them carefully. It will approximately take 4-5 minutes to finish the questionnaire. All the answers will be used for academic research purpose only and will remain confidential.

Please feel free to contact () if there are any questions. I sincerely appreciate for giving your valuable time and responses to complete the questionnaire.

* Required

Section A

Please rate the healthiness of following products:

1. I think Yogurt is *

Mark only one oval.

| | | | | | | | | |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very unhealthy | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very healthy |

2. I think Yogurt has *

Mark only one oval.

| | | | | | | | | |
|----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very low nutritional value | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very high nutritional value |

3. I think yogurt is *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------------------|
| Very bad for my body | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very good for my body |

4. I think potato chips are *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------|
| Very unhealthy | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very healthy |

5. I think potato chips have *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------------------|
| Very low nutritional value | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very high nutritional value |

6. I think potato chips are *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------------------|
| Very bad for my body | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very good for my body |

Section B

Imagine you are purchasing a product in a supermarket. Please observe the product image carefully and rate the healthiness of a product.



7. The product looks nutritious.*

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

8. The product looks like it used good ingredients.*

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

9. The product looks healthy. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

10. The product looks like it used natural ingredients. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

11. It looks like a good quality product. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

12. It looks like it has low calories. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

13. It looks like it includes low fat content. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

Section C

Imagine you are purchasing a product in a supermarkt. Please observe the image carefully and rate the healthiness of a product.



7. The product looks nutritious. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

8. The product looks like it used good ingredients. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

9. The product looks healthy. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

10. The product looks like it used natural ingredients. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

11. It looks like a good quality product. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

12. It looks like it has low calories. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

13. It looks like it includes low fat content. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

Section D

Please rate on following items

21. No additives products are attractive. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

22. No additives products are important. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

23. How do food additives affect human health? *

Mark only one oval.

| | | | | | | | | |
|--------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very harmful | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very beneficial |

24. How do you feel about food additives? *

Mark only one oval.

| | | | | | | | | |
|-------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very unsafe | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very safe |

25. Yogurt is an important product to me. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

26. I have a lot of interest in yogurt. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

27. Potato Chips is an important product to me. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

28. I have a lot of interest in Potato Chips. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

Section E

29. I am a *

Mark only one oval.

- ☐ Male
☐ Female

30. Please select the category that includes your age. *

Mark only one oval.

- ☐ Under 18
☐ 18-24
☐ 25-34
☐ 35-44
☐ 45 or older

31. 5 What is your current employment status? *

Mark only one oval.

- ☐ Employed full time
☐ Employed part time
☐ Unemployed looking for a job
☐ Unemployed not looking for a job
☐ Retired
☐ Student

32. What is your highest level of education? *

Mark only one oval.

- ☐ Less than high school
☐ High school graduate
☐ Some college
☐ 4- year undergraduate degree
☐ Master's degree
☐ Doctorate

A Research on Perceived Healthiness of Food Products (Group 2)

I am Era Pradhan, a Master student of Business Administration (Marketing) at Seoul National University. This questionnaire is for my graduation thesis which focuses on consumer's beliefs or perceptions about healthiness of food products. Please read every [questions](#) and answer them carefully. It will approximately take 4-5 minutes to finish the questionnaire. All the answers will be used for academic research purpose only and will remain confidential.

Please feel free to contact () if there are any questions. I sincerely appreciate for giving your valuable time and responses to complete the questionnaire.

* Required

Section A

Please rate the healthiness of following products:

1. I think Yogurt is *

Mark only one oval.

| | | | | | | | | |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very unhealthy | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very healthy |

2. I think Yogurt has *

Mark only one oval.

| | | | | | | | | |
|----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very low nutritional value | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very high nutritional value |

3. I think yogurt is *

Mark only one oval.

| | | | | | | | | |
|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very bad for my body | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very good for my body |

4. I think potato chips are *

Mark only one oval.

| | | | | | | | | |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very unhealthy | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very healthy |

5. I think potato chips have *

Mark only one oval.

| | | | | | | | | |
|----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very low nutritional value | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very high nutritional value |

6. I think potato chips are *

Mark only one oval.

| | | | | | | | | |
|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very bad for my body | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very good for my body |

Section B

Imagine you are purchasing a product in a supermarket. Please observe the product image carefully and rate the healthiness of a product.



7. The product looks nutritious. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

8. The product looks like it used good ingredients. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

9. The product looks healthy. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

10. The product looks like it used natural ingredients. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

11. It looks like a good quality product. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

12. It looks like it has low calories. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

13. It looks like it includes low fat content. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

Section C

Imagine you are purchasing a product in a supermarket. Please observe the image carefully and rate the healthiness of a product.



7. The product looks nutritious. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

8. The product looks like it used good ingredients. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

9. The product looks healthy. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

10. The product looks like it used natural ingredients. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

11. It looks like a good quality product. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

12. It looks like it has low calories. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

13. It looks like it includes low fat content. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

Section D

Please rate on following items:

21. No additives products are attractive. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

22. No additives products are important. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

23. How do food additives affect human health? *

Mark only one oval.

| | | | | | | | | |
|--------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very harmful | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very beneficial |

24. How do you feel about food additives? *

Mark only one oval.

| | | | | | | | | |
|-------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Very unsafe | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very safe |

25. Yogurt is an important product to me. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

26. I have a lot of interest in yogurt. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

27. Potato Chips is an important product to me. *

Mark only one oval.

| | | | | | | | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

28. I have a lot of interest in Potato Chips. *

Mark only one oval.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| Totally disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Totally agree |

Section E

29. I am a *

Mark only one oval.

- ☐ Male
☐ Female

30. Please select the category that includes your age. *

Mark only one oval.

- ☐ Under 18
☐ 18-24
☐ 25-34
☐ 35-44
☐ 45 or older

31. 5 What is your current employment status? *

Mark only one oval.

- ☐ Employed full time
☐ Employed part time
☐ Unemployed looking for a job
☐ Unemployed not looking for a job
☐ Retired
☐ Student

32. What is your highest level of education? *

Mark only one oval.

- ☐ Less than high school
☐ High school graduate
☐ Some college
☐ 4- year undergraduate degree
☐ Master's degree
☐ Doctorate

9. Abstract in Korean

사람들의 건강에 대해 걱정 높아질 수록 식품 회사가 건강을 나타내는 “무첨가물” 표시를 식품에 많이 사용한다. 이전의 연구들은 식품 첨가물에 대한 소비자의 걱정과 불안성을 집중했으나 시장의 사용하고 있는 무첨가물에 대한 연구들은 부족하다. 이 연구는 무첨가물이 표시된 식품의 소비자의 평과에 어떤 역할을 하는 및 음식 유형과 성별 효과를 중심으로 연구를 했다. 이 연구에 2 그룹이 있었는데 그룹 1에는 첨가물 표시가 없는데 그룹 2에는 첨가물 표시가 있었다. 이 연구는 온라인으로 진행했으며 총히 105 명들이 참석을 했다. 연구 결과에 따르면 소비자들의 평가는 무첨가물이 표시가 없을 때보다 표시가 있을 때가 높았다. 게다가 무첨가물이 표시된 식품에는 소비자들의 평가는 건강한 식품보다 건강하지 않은 식품에 높았고 남자들보다 여자들 경우에 높았다고 결과를 제시했다.

주요어: 소비자의 평가, 무첨가물, 음식 유형, 성별

학번: 2017-20498